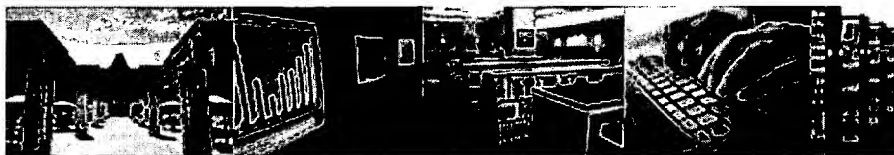




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2+

Your Contact Information:

* indicates mandatory information.

Your Name: TAMTHOM TRUONG

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 (e.g., Susan.Smith@uspto.gov)

*Employee No.: 74142

*Art Unit/Org.: 1624

*Office Location: REM --- 5B19

*Phone No.: x 20676

Mailbox No.: REM -- 5C18

poss. interference
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 10/14/2005
 DIVISIONAL (STIC)

*Case serial number: 09/ 582,442

If not related to a patent application, please enter NA here.

Class / Subclass(es) 514/252, 256, 269, 274, 275
 544/238, 295, 296, 298, 311, 317, 319, 320,
 326, 329.

Earliest Priority Filing Date: 12-26-97

Format preferred for results:

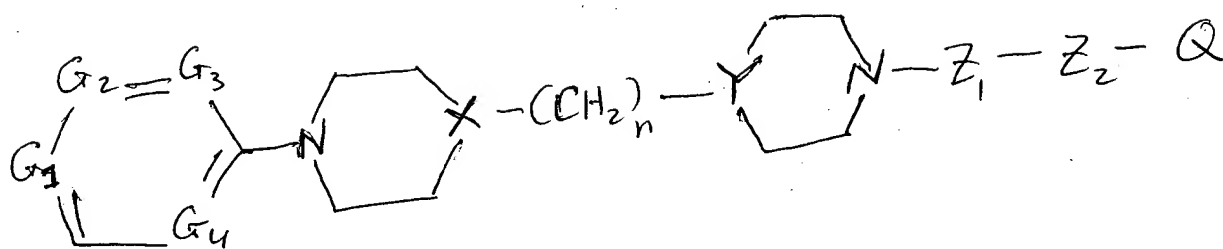
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- In your own words, describe in detail the concepts or subjects you want us to search.
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 Include the elected species or structures, keywords, synonyms, acronyms, and chemical structure.
- *For Sequence Searches Only*
 Include all pertinent information (parent, child, divisional, or issued patent number and serial number).
- *For Foreign Patent Family Searches Only*
 Include the country name and patent number.

9/582,442

Query



- G_1, G_2, G_3 + G_4 are independently N or CH -
but at least one is N;
- X is CH or N;
- Y is N;
- Z_1 is $-SO_2-$ or $-CH_2-$;
- Z_2 is a bond, alkylene, alkenylene or alkynylene.
- Q is a ring

See also attached claims 1 + 20



#170
PS
PATENT
1110-0271P

IN THE U.S. PATENT AND TRADEMARK OFFICE

RECEIVED

JUN 13 2002

TECH CENTER 1600/2900

Applicant: NISHIDA, Hidemitsu et al.

Conf.: 3582

Appl. No.: 09/582,442

Group:

Filed: June 26, 2000

Examiner: T. TRUONG

For: AROMATIC COMPOUNDS HAVING CYCLIC AMINO GROUPS AND
SALTS THEREOF

AMENDMENT UNDER 37 CFR 1.111

Assistant Commissioner for Patents
Washington, DC 20231

June 12, 2002

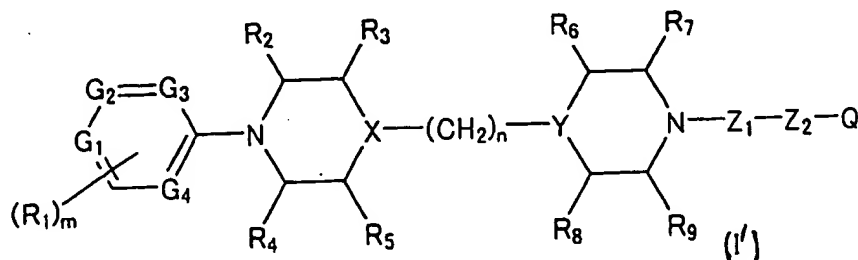
Sir:

In reply to the Office Action of March 12, 2002, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

IN THE CLAIMS:

Please amend claims 1, 2, 6, and 17 to read:

01
1. (thrice amended) A method for treating a disease for which the FXa inhibitor is indicated, comprising: administering an effective amount of a composition comprising a pharmaceutical carrier and at least one compound represented by the following formula (I') or a salt thereof:



wherein G_1 , G_2 , and G_3 are independently CH or N and G_4 is CH, provided that one or two of G_1 to G_3 is N;

X is CH and Y is N;

Z_1 is a group represented by the formula $-SO_2-$ or $-CH_2-$;

Z_2 is a single bond, a lower alkylene group, a lower alkenylene group or a lower alkynylene group;

Q is an optionally substituted aryl group in the form of a monocyclic or fused hydrocarbon ring having 6-14 carbon atoms or an optionally substituted heteroaryl group in a monocyclic or fused cyclic form having 1-4 heteroatoms selected from the group consisting of oxygen, sulfur, and nitrogen atoms;

01 R_1 is either any substituent selected from group A (a hydrogen atom; a halogen atom; a trifluoromethyl group; a trifluoromethoxy group; a carboxyl group; a carbamoyl group; an amino group; a cyano group; a nitro group; a lower alkanoyl group; a lower alkoxy group; a lower alkoxy carbonyl group; a mono- or di-substituted lower alkylamino group; a cyclic amino group optionally substituted by a lower alkyl group or a hydroxyl group and being a pyrrolidinyl group, a piperidinyl group, a morpholino group, or a piperazinyl group; a lower alkanoylamino group; a phenyl group; a phenoxy group; a benzyloxy group; a benzoyl group; a mercapto group; a lower alkylthio group; a lower alkylthiocarbonyl group; a hydroxyl group; or a mono- or di-substituted lower alkylaminocarbonyl group), or an oxygen atom that forms a N-oxide group with N in any one of $G_1 - G_4$, or a lower alkyl group or a lower alkenyl group that may be substituted with a desired number of substituents of group A or a lower alkoxy group or a lower alkoxy group which may be substituted with a desired number of substituents of group A or a lower alkoxy group;

each of R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 and R_9 forms an oxo group when combined with the carbon atom on the ring to which they are bound, or they are each a hydrogen atom, a carboxyl group, a lower alkylcarbonyl group, a lower

alkoxycarbonyl group, a lower alkoxycarbonylalkylcarbonyl group, an optionally mono- or di-lower alkyl substituted carbamoyl group, a lower alkoxycarbamoyl group, a lower alkoxycarbonylalkylcarbamoyl group, a pyrrolidin-1-ylcarbonyl group, a morpholinocarbonyl group, a piperazin-1-ylcarbonyl group that may be substituted by a methyl group in 4-position, a piperidin-1-ylcarbonyl group that may be substituted by a methyl group or a hydroxyl group in 4-position, an N-phenylcarbamoyl group or a group represented by the formula $-\text{CONH}(\text{CH}_2)_p\text{S}(\text{O})_q\text{R}_{10}$ or $-\text{CONH}(\text{CH}_2)_r\text{NR}_{11}\text{R}_{12}$, or a lower alkyl group that may be substituted by R_{15} ;

each of R_{10} , R_{11} and R_{12} independently represents a hydrogen atom, a lower alkyl group, a phenyl group or a lower alkylphenyl group;

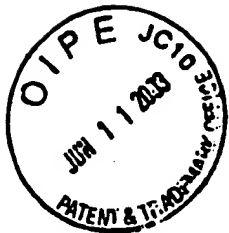
R_{15} is a carboxyl group, a lower alkoxycarbonyl group, a hydroxyl group, a lower alkoxy group, a lower alkanoyloxy group, an amino group, a mono- or di-substituted lower alkylamino group, a lower alkanoylamino group, a lower alkylsulfonylamino group, a cyclic amino group optionally substituted by a lower alkyl group or a hydroxyl group and being a pyrrolidinyl group, a piperidinyl group, a morpholino group, or a piperazinyl group, or an N-hydroxyimino group;

provided that R_6 may also represent two lower alkyl groups in geminal;

also provided that if any one of the substituents $\text{R}_2 - \text{R}_9$ includes cyclic group, such cyclic group may be substituted by one or two lower alkyl groups;

m is an integer of 0 - 3 and n is 1, p is an integer of 0 - 4, q is an integer of 0 - 2, and r is an integer of 1 - 4.

2. (thrice amended) The method according to claim 1, wherein the substituent of the optionally substituted aryl or heteroaryl group as Q of the formula (I') is 1 - 4 groups in any combinations that are selected from among substituents of either group B (a halogen atom, a trifluoromethyl group, a trifluoromethoxy group, a trifluoromethanesulfonyl group, a carboxyl group, a carbamoyl group, an amino group, a cyano group, a nitro group, a lower alkanoyl group, a lower alkoxy group, a lower alkoxycarbonyl group, a mono- or di-



#21F
PS

BOX AF
PATENT
1110-0271P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: NISHIDA, Hidemitsu et al. Conf.: 3582
Appl. No.: 09/582,442 Group: 1624
Filed: June 26, 2000 Examiner: T. TRUONG
For: AROMATIC COMPOUNDS HAVING CYCLIC AMINO GROUPS AND
SALTS THEREOF

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

AMENDMENT PURSUANT TO 37 CFR 1.607

Box AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

June 11, 2003

Sir:

The following amendments and remarks are respectfully
submitted in connection with the above-identified
application.

IN THE CLAIMS:

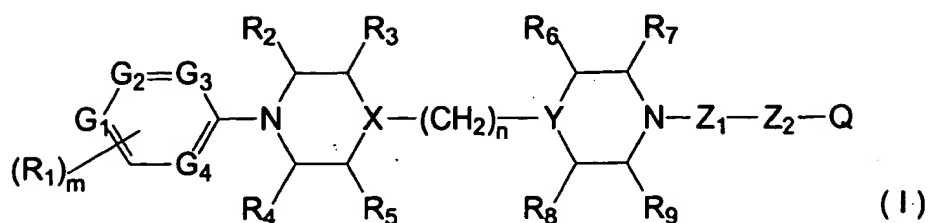
Please add the following new claims:

F1 - (20) (New) A compound represented by the following
formula (I) or a salt thereof:

06/12/2003 ZJUHR1 00000023 09582442

01 FC:1201
02 FC:1202

168.00 OP
270.00 OP



wherein

at least one of G_1 , G_2 , G_3 and G_4 is N and the remaining are independently CH or N;

X is CH or N;

Y is N;

Z_1 is a group represented by the formula $-SO_2-$;

Z_2 is a single bond;

Q is an aryl group being unsubstituted or substituted with 1 to 4 substituents selected from the group consisting of the Group B or a lower alkyl group that may be substituted by a desired number of substituents of Group B, wherein Group B is:

- a halogen atom,
- a trifluoromethyl group,
- a trifluoromethanesulfonyl group,
- a carbamoyl group,
- an amino group,
- a cyano group,
- a nitro group,
- a lower alkanoyl group,

a lower alkoxyl group,
a lower alkoxycarbonyl group,
a mono- or di-substituted lower alkylamino group,
a lower alkanoylamino group,
a cyclic amino group,
a mercapto group,
a lower alkylthio group,
a lower alkylsulfonyl group,
a hydroxyl group or a mono- or di-substituted lower
alkylaminocarbonyl group,

an amidino group,

F₁
a group of the formula $\text{-NHCR}_{13}\text{-NHR}_{14}$

wherein R_{13} is an optionally

cyano-substituted imino group or a group =CHNO_2 ;

R_{14} is a hydrogen atom or a methyl group,

a phenyl group,

a heteroaryl group,

a heteroaryloxy group, or

or a group represented by heteroaryl-S(O)t,

wherein t is an integer of 0 - 2,

the heteroaryl group of group B is a 5- or 6-membered
aromatic monocyclic group containing not more than four
oxygen atoms, sulfur atoms or nitrogen atoms, provided that

all aromatic rings of Group B may be mono-, di-, or tri-substituted by any substituent of Group C, wherein Group C is

- a halogen atom,
- a hydroxyl group,
- an amino group,
- a mono- or di-substituted lower alkylamino group,
- a cyclic amino group,
- a mono- or di-substituted lower alkylaminocarbonyl

group,

F₁

- a lower alkyl group,
- a lower alkoxy group or

R₁ is any substituent selected from group A

wherein Group A is

- a hydrogen atom,
- a halogen atom,
- a trifluoromethyl group,
- a carbamoyl group,
- an amino group,
- a cyano group,
- a nitro group,
- a lower alkanoyl group,
- a lower alkoxy group,
- a lower alkoxycarbonyl group,

a mono- or di-substituted lower alkylamino group,

a cyclic amino group,

a lower alkanoylamino group,

a phenyl group,

a benzoyl group,

a mercapto group,

a lower alkylthio group,

a hydroxyl group or

F₁ a mono- or di-substituted lower alkylamino- carbonyl group, R₁ may also be an oxygen atom that forms a N-oxide group with N in any one of G₁ - G₄, or a lower alkyl group, a lower alkoxy group or a lower alkenyl group that may be substituted with a desired number of substituents selected from

a hydrogen atom,

a halogen atom,

an amino group,

a cyano group,

a lower alkoxy group,

a mono- or di-substituted lower alkylamino group,

a lower alkanoylamino group, or

a hydroxyl group;

one of R₂, R₃, R₄, R₅ is hydrogen and the remaining are selected from a lower alkoxycarbonyl group, an optionally

mono- or di-lower alkyl substituted carbamoyl group, an N-phenylcarbamoyl group or a group represented by the formula $-\text{CONH}(\text{CH}_2)_p\text{S}(\text{O})_q\text{R}_{10}$ or $-\text{CONH}(\text{CH}_2)_r\text{NR}_{11}\text{R}_{12}$, or a lower alkyl group that may be substituted by R_{15} ;

R_6 forms a carbonyl group with the carbon atom on the ring to which it is attached;

each of R_7 , R_8 and R_9 is a hydrogen atom, a lower alkoxy carbonyl group, an optionally mono- or di-lower alkyl substituted carbamoyl group, an N-phenylcarbamoyl group or a group represented by the formula $-\text{CONH}(\text{CH}_2)_p\text{S}(\text{O})_q\text{R}_{10}$ or $-\text{CONH}(\text{CH}_2)_r\text{NR}_{11}\text{R}_{12}$, or a lower alkyl group that may be substituted by R_{15} ;

each of R_{10} , R_{11} and R_{12} independently represents a hydrogen atom, a lower alkyl group, a phenyl group or a lower alkylphenyl group;

R_{15} is a carboxyl group, a hydroxyl group, or an amino group;

m and n are independently an integer of 0-3,

p is an integer of 0-4,

q is an integer of 0-2, and

r is an integer of 1-4;

provided that if any one of the substituents R_2 , R_3 , R_4 , R_5 , R_7 , R_8 , or R_9 includes a cyclic group, such cyclic group may be substituted by one or two lower alkyl groups.